

Summary

Developing regulatory floodplain maps is a complex process that uses the most accurate data available. The result is a reliable map of the areas in a community that are prone to flooding.

Floodplain maps are utilized by emergency responders, the insurance industry, community planners, developers, and mortgage lenders. The maps are also critical tools for local floodplain managers, and local, state, and federal emergency management for communicating and managing flood risk.



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Understanding the Flood Study Process

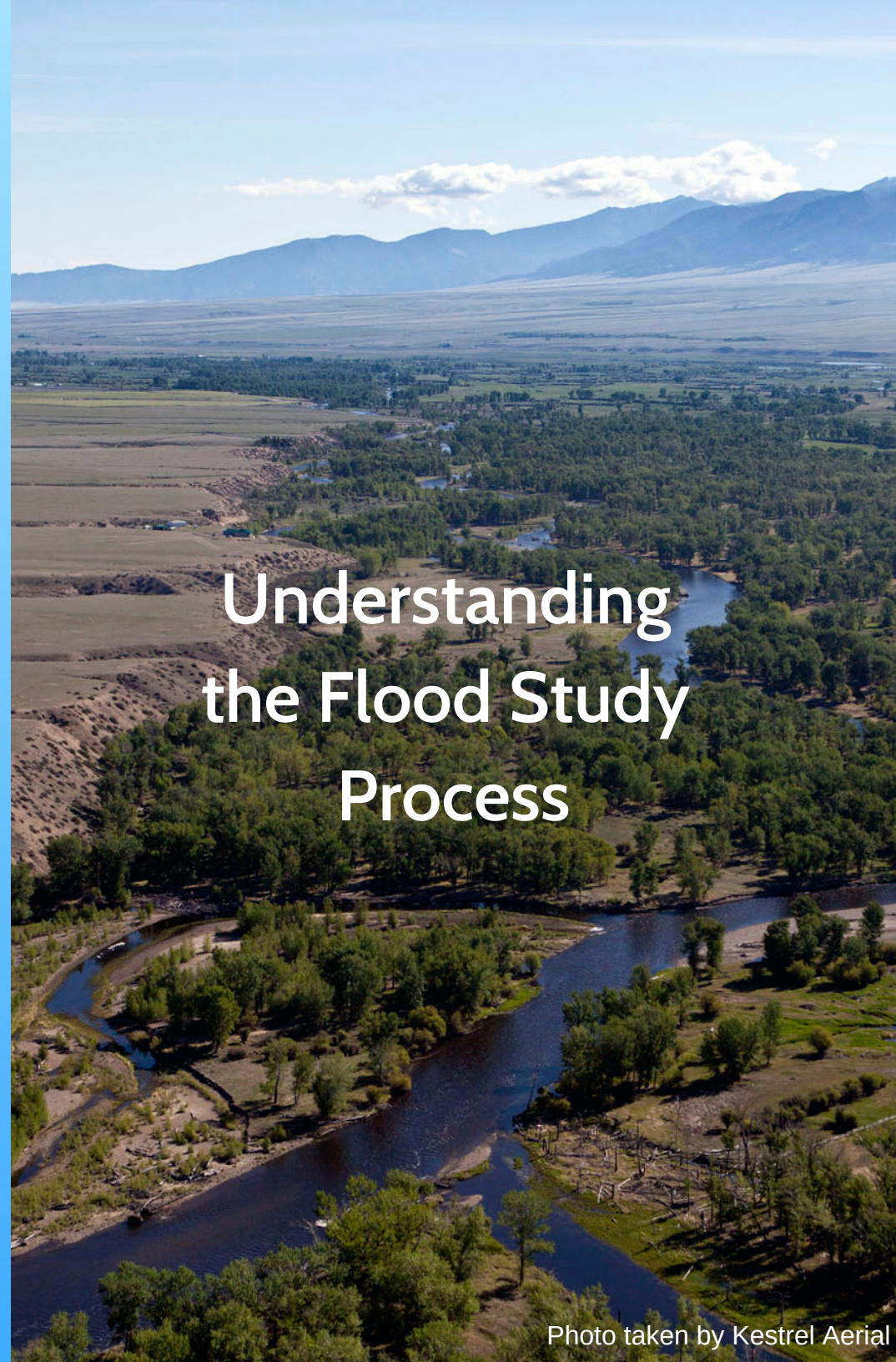


Photo taken by Kestrel Aerial

Flood Study Steps

Step 1 - Survey: measurements are made of the topography around the river, along with any culverts, bridges, and road crossings. An airplane is used to collect ground elevation over a large area, and Ground Survey supplements the airborne data.

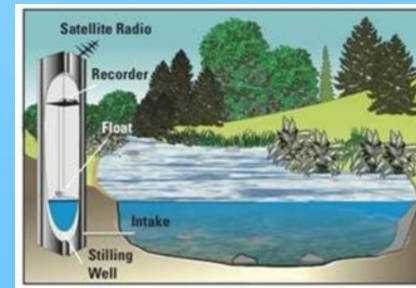
Step 2 - Hydrology: determines how much water there will be in the river during a flood event. Data from stream gauges will tell how many cubic feet of water per second the river will carry during the flood.

Step 3 - Hydraulics: once the first two steps are complete, calculations can show where the water will go during the flood. The elevation data is combined with the flood flow data to determine where the water will go when it overflows the channel.

Step 4 - Mapping (delineation): the results from step 3 are combined with the elevation data and official maps to see how far the water will spread out. The area shown to be underwater during the flood is the regulatory floodplain.



Step 1 - Survey: The type of the survey depends on the size of the study area and type of study.



Step 3 - Hydraulics:

5 main components to the model

- 1) Hydrology (stream flow data)
- 2) Cross Sections (measurements of the river bottom at key locations)
- 3) Roughness (thickness of vegetation, land cover, etc determined by surveyors)
- 4) Structures (road crossings, culverts, bridges, etc.)
- 5) Downstream conditions



Step 4 - Mapping (delineation):

The result will be the floodplain boundary and a depth grid identifying the shallower and deeper areas of flooding.